

553,364

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
4 November 2004 (04.11.2004)

PCT

(10) International Publication Number
WO 2004/093951 A1

(51) International Patent Classification⁷: **A61M 15/00,**
A61B 5/097

(21) International Application Number:
PCT/GB2004/001714

(22) International Filing Date: **16 April 2004 (16.04.2004)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:
0308771.5 **16 April 2003 (16.04.2003)** **GB**

(71) Applicant (for all designated States except US): **LOUGHBOROUGH UNIVERSITY ENTERPRISES LIMITED** [GB/GB]; Finance Office, Loughborough University, Loughborough, Leicestershire LE11 3TU (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SMITH, Peter, Richard** [GB/GB]; Loughborough University, Loughborough, Leicestershire LE11 3TU (GB). **KUSMARTSEVA, Olga** [GB/GB]; Loughborough University, Loughborough, Leicestershire LE11 3TU (GB).

(74) Agent: **HIGGIN, Paul**; Swindell & Pearson, 48 Friar Gate, Derby DE1 1GY (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

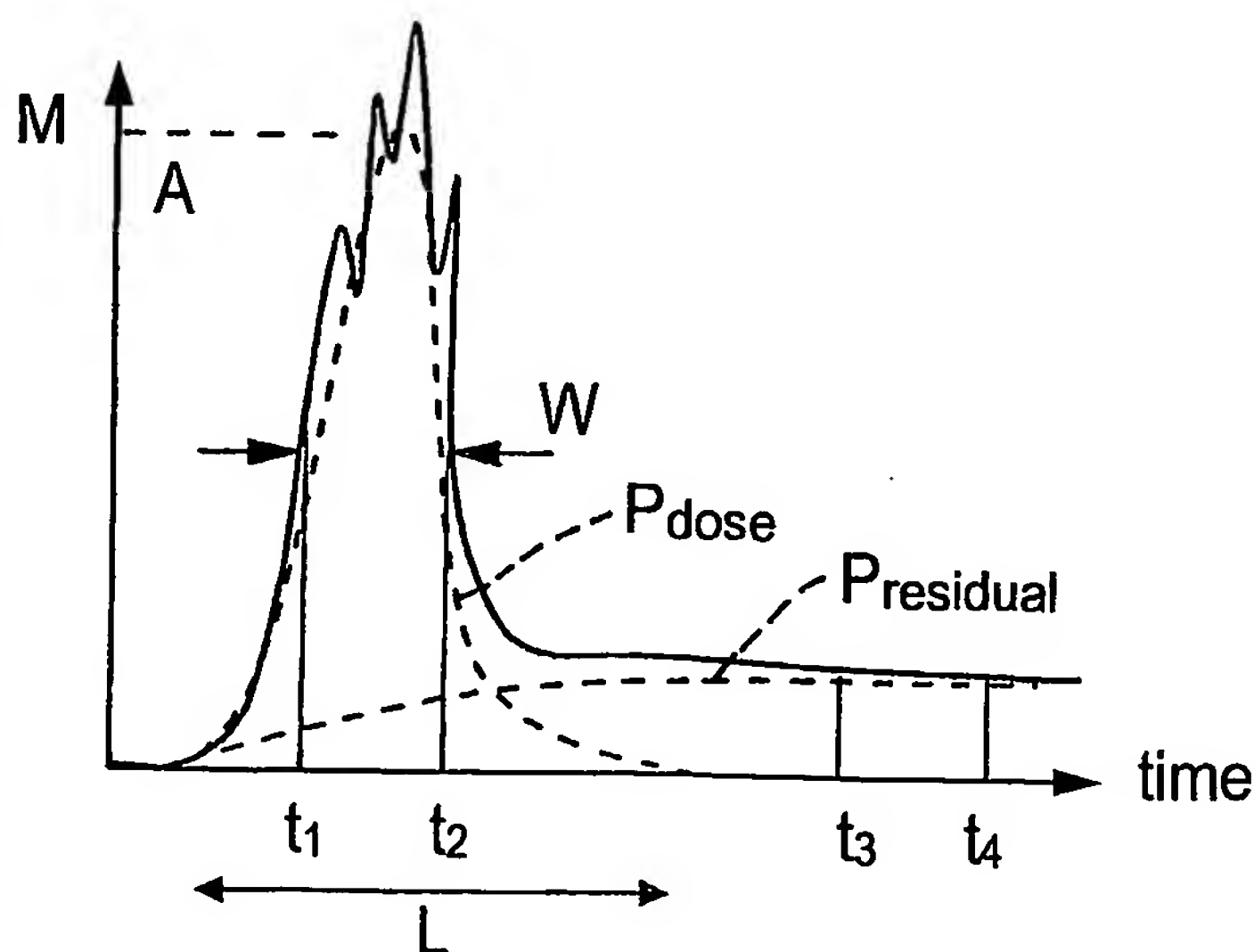
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **DEVICE FOR PULMONARY DRUG DELIVERY**



(57) Abstract: A method of assessing the effectiveness of pulmonary drug delivery, comprising the steps of: a) providing a drug into an air flow past a sensor comprising a radiation source and a radiation detector; b) detecting, at the radiation detector, incident radiation over a period of time as a measurement profile; c) quantifying at least one characteristic of the shape of a measurement profile; and d) producing an indication of the effectiveness of pulmonary drug delivery based upon the at least one quantified characteristic.

WO 2004/093951 A1